

AMENDMENT TO THE CLAIMS:

Please amend the claims as set forth below. Support for the amendments is found on page 6, line 19-page 8, line 21. No new matter is added.

1. (Currently Amended) A network element management system (NEMS) including processing equipment adapted to perform a method of analyzing a plurality of network elements configured to support at least one established communication path in a network, the method comprising:

(a) receiving from one of a plurality of network elements included within an established communication path, a notification signal[[,]] ~~the notification signal indicative of the existence of the established communication path that a new communication path has been established in the network;~~

(b) ~~in response to receiving of the notification signal, querying~~ requesting local network information from a network element ~~in the network for included within the established communication path~~ local network information;

(c) ~~receiving from the network element the requested~~ local network information from the network element in response to querying, the local network information comprising one or more of items selected from the group including topology information, connection information[[,]] and performance information;

(d) analyzing the received local network information ~~received to map an associated portion of the established communication path~~ established communication path in the network ;

(e) responsive to the received local network information ~~received and the corresponding mapped portion of the~~ established communication path mapped in the analyzing step, selecting a next network element of the established communication path for querying; and

~~if the next network element has been selected, iterating the method from the querying step for the next network element~~

repeating steps (b)-(e) for the next selected network element.

2. (Canceled).

3. (Previously Presented) The NEMS as defined in claim 1, wherein the method further comprises: determining network capacity using communication path data from the analyzing step.

4. (Previously Presented) The NEMS as defined in claim 1, wherein the method further comprises: determining network performance using communication path data from-the analyzing step.

5. (Previously Presented) The NEMS as defined in claim 1, wherein the method further comprises: detecting network faults using communication path data from the analyzing step.

6. (Previously Presented) The NEMS as defined in claim 1, wherein the topology information includes a routing table and wherein the connection information includes a connection table.

7-12. (Canceled).

13. (Previously Presented) A network element management system (NEMS) including processing equipment adapted to perform a method for analyzing a plurality of network elements configured to support at least one established communication path of a network, the method comprising:

receiving a notification signal from a network element, said notification signal indicative of a new established communication path in the network, said notification signal including circuit identifier information;

querying the network element in the network for connection information;

receiving the connection information from the network element in response to querying;

comparing the connection information with the circuit identifier information to determine a match condition; and

if the match condition occurs in the comparing step:

querying the network element for routing information;
receiving the routing information from the network element;
analyzing the routing information received to map the new established communication path in the network;

selecting a next network element to query along the new established communication path; and

if the next network element has been selected, fetching from the received circuit identifier information, circuit identifier information associated with the next network element and iterating the method from the step of querying for the connection information for the next network element.

14. (Currently Amended) The NEMS as defined in claim 13, wherein the method further comprises:

storing communication path data of the established communication path in the network.

15. (Canceled).

16. (Previously Presented) The NEMS as defined in claim 13, wherein the method further comprises:

storing communication path data of the established communication path in the network.

17. (Currently Amended) Apparatus for analyzing a plurality of network elements interconnected to form a communication network and configured to support at least one established communication path in the communication network, the apparatus comprising:

means, responsive to receiving from one of a plurality of network elements included within an established communication path, [[of]] a notification signal, for querying a network element in the communication network for local network information, the local network information comprising one or more items selected from

the group including topology information, connection information, and performance information, wherein the notification signal is indicative of the existence of the established communication path ~~that a new communication path has been established in the network;~~

means, responsive to receipt of the local network information, for analyzing the local network information received to map an associated portion of the established communication path ~~in the network;~~ and

means, responsive to the local network information received and the corresponding mapped portion of the established communication path ~~mapped in the~~ analyzing means, for selecting a next network element of the established communication path ~~for querying;~~

wherein the means for querying is further responsive to a notification that the next network element has been selected.

18. (Previously Presented) The apparatus as defined in claim 17, wherein the querying means further comprises:

means for receiving the notification signal from one or more network elements, the notification signal indicative of a network event.

19. (Previously Presented) The apparatus as defined in claim 17, further comprising:

means for determining network capacity using communication path data of the established communication path from the analyzing means.

20. (Previously Presented) The apparatus as defined in claim 17, further comprising:

means for determining network performance using communication path data of the established communication path from the analyzing means.

21. (Previously Presented) The apparatus as defined in claim 17, further comprising:

means for detecting network faults using communication path data of the established communication path from the analyzing means.

22. (Previously Presented) The apparatus as defined in claim 17, wherein the topology information includes a routing table and wherein the connection information includes a connection table.

23. (Previously Presented) The apparatus as defined in claim 17, further comprising:
means for storing communication path data of the established communication path in the network.

24. (Previously Presented) The NEMS as defined in claim 13, wherein the method further comprises:

determining network performance using communication path data about the established communication path mapped in the analyzing step.

25. (Currently Amended) A computer readable storage medium storing instructions, wherein the instructions, when executed by a processor, cause the processor to perform a method for analyzing a plurality of network elements configured to support at least one established communication path in a network, the method comprising:

(a) receiving from one of a plurality of network elements included within an established communication path, a notification signal[[,]] ~~the notification signal indicative of the existence of the established communication path that a new communication path has been established in the network;~~

(b) ~~in response to receiving of the notification signal, querying~~ requesting local network information from a network element ~~in the network for~~ included within the established communication path ~~local network information;~~

(c) receiving from the network element the requested local network information ~~from the network element in response to querying~~, the local network information comprising one or more of ~~items selected from the group including~~ topology information, connection information[[,]] and performance information;

(d) analyzing the received local network information ~~received~~ to map an associated portion of the established communication path ~~established communication path in the network ;~~

(e) responsive to the received local network information ~~received~~ and the corresponding mapped portion of the established communication path ~~mapped in the analyzing step~~, selecting a next network element of the established communication path for querying; and

~~if the next network element has been selected, iterating the method from the querying step for the next network element~~

repeating steps (b)-(e) for the next selected network element.

26. (Previously Presented) The computer readable storage medium as defined in claim 25, wherein the method further comprises: determining network capacity using communication path data from the analyzing step.

27. (Previously Presented) The computer readable storage medium as defined in claim 25, wherein the method further comprises: determining network performance using communication path data from the analyzing step.

28. (Previously Presented) The computer readable storage medium as defined in claim 25, wherein the method further comprises: detecting network faults using communication path data from the analyzing step.

29. (Newly added) The NEMS as defined in claim 1, wherein the next selected network element comprises a neighboring network element.

30. (Newly added) The NEMS as defined in claim 13, wherein the next selected network element comprises a neighboring network element.

31. (Newly added) The apparatus as defined in claim 17, wherein the next selected network element comprises a neighboring network element.

32. (Newly added) The computer readable storage medium as defined in claim 25, wherein the next selected network element comprises a neighboring network element.